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ABSTRACT

At the North Campus of Florida Junior College at Jacksonville, a Developmental Education Program has been initiated to serve the needs of students entering college with deficient skills. Individualized instruction, open-ended courses, counseling to improve student self-concept, performance objectives, and objective evaluations are ingredients central to the program. After a review of current practices in remedial education, the Developmental Program is discussed in terms of its establishment, philosophy, and objectives. This study attempts to document the program's impact on the students in terms of improved GPA, decreased rate of withdrawal, and increase in units passed per term. Students participating in the Developmental Program were matched by skill levels with others taking comparable regular classes. The developmental students, during fall term, passed more credit hours (7.9 compared to 5.6), had a higher overall GPA (2.30 compared to 1.20), and had a 4 percent dropout rate compared to 25 percent for the control group. Similar results were obtained in winter quarter, although discrepancies were not as large due to the higher attrition rate of control students during fall quarter. (AH)

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THE DEVELOPMENTAL PROGRAM--IS IT WORKING?

by

Jon P. Cosby

Florida Junior College at Jacksonville
North Campus

A PRACTICUM PRESENTED TO NOVA UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF EDUCATION

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INTRODUCTION

Considering the current poor status of remedial education in the community colleges, it is unlikely that any remedial program will be accepted, and supported accordingly, by the other segments of the college until they have demonstrated that the probability of success for marginal students is greatly increased via their program. Many of the proponents of remedial education, however, would rationally argue that these programs serve a multiplicity of functions and therefore should not be judged solely on student success. But the fact remains that this is the measure most often used in determining the credibility of remedial programs[1]; consequently, the primary purpose of this practicum will be to determine if the remedial education program on the North Campus of the Florida Junior College at Jacksonville is fulfilling this role.

Accordingly, in this study the academic achievements of the students enrolled in the North Campus' Developmental Studies Program will be compared with a similar group of students enrolled in regular college classes. The relevant group parameters will be compared at the end of each term, starting with Term I, 1973, and extending through Term IV,

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[1]Examples can be cited in studies by Snyder and Block (1970), and Kirk (1972).

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1975; however, due to the constraints of time, only Terms I and II of the 1973/74 academic year will be reported in this study. In addition, the similar achievements of the following groups of students in different learning paradigms within the confines of developmental education will be compared:

1. Full-time students (12 or more hours) enrolled in all developmental classes with full-time students enrolled in only two developmental classes--reading and English,

2. Students enrolled in all developmental classes Term I and regular classes Term II with students enrolled in all developmental classes Term I and one or two developmental classes Term II.

Hopefully, the discrepancies between the aforementioned groups will be of such magnitude as to enable one to validate the following hypotheses upon which the North Campus Developmental Education Program has been predicated:

1. Remedial students[1] entering the Developmental Education Program will pass more courses and make better grades than those in traditional classes not only for the term they are enrolled in the program, but for subsequent terms as well.

2. Remedial students enrolled in developmental classes are more inclined to complete the term and return the subsequent semester than are those enrolled in regular classes.

3. Remedial students entering the complete program (four courses) will pass more courses, make better grades and have a higher persistence rate than those who partially enroll in developmental classes.

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[1]Remedial students are defined as persons reading below the 10th grade level on the Nelson-Denny Reading Test.

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4. Remedial students who are gradually phased out of the developmental program[1] will pass more courses, make better grades and be more persistent than those who exit the program at the end of the first term.

BACKGROUND AND SIGNIFICANCE

Although the major purpose of this study is to evaluate the Developmental Education Program of the North Campus of Florida Junior College, this is of little value unless one has an understanding of the program. As Florida Junior College is only eight years old, the proper prospectus of the North Campus' Developmental Program can probably best be presented by retracing the chronological evolution of remedial education at the college.

The need for remedial education was quickly realized at the college, and Guided Studies Courses were introduced during the second year of its operation (1966-67). Initially, non-credit courses were offered in English and mathematics for students scoring below the fifteen percentile in the English or mathematics segment of the Florida Twelfth Grade Placement Test (F.T.G.P.T.) In addition, there was a Guided Studies Institute on the Cumberland Campus, then the main campus, which offered these and similar courses in reading and speech for the students whose cumulative F.T.G.P.T. score was below 125[2]. Although the institute did embrace some of

[1]These students take one or two developmental classes the second term along with regular classes.

[2]125 was the fifteen percentile score.

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the concepts of a viable program (counseling, tutoring, etc.), little had actually been developed by August of 1970 when the first permanent campus was opened--the North Campus. At that time, the institute (along with many other programs) was moved to this site; however, many members of its staff were not. As a result of this, during the first year on the North Campus, the institute could be described as three or four instructors teaching remedial students, each somewhat independently of the other. Their approaches were primarily traditional, some had previously only taught regular college classes and all were dissatisfied with the status of the institute.

The pervasive connotation of remedial education at the college was that it was a necessary evil. Everyone agreed there had to be a token effort and someone had to do it; otherwise where could the college parallel teachers send the students who "weren't college material." In short, most of what Roueche (1968) had found true of remedial education in general could be said about the guided studies programs at Florida Junior College prior to 1971. As would be expected, the students had a very negative impression of guided studies classes. This view was shared by the counselors and the other members of the instructional staff including most members of the Guided Studies Department. This general feeling of discontent for the program was reflected in the following statement by Stuckman (1970), after having completed a study of the Guided Studies Program from

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the fall of 1967 to the winter term of 1970:

> It is apparent that the Guided Studies effort at the college during the past three years cannot be characterized as one of Florida Junior College's success stories. From this past performance record, those persons involved with the Guided Studies Program on the North Campus and with Guided Studies courses on the San Diego and Cumberland Campuses should sense that a change of direction and method is needed.

Why, then, was there a change in attitude about the necessity for a viable remedial education program during the first year on the North Campus? First of all, the campus is located in the northern section of Jacksonville, which is inhabited primarily by minorities and/or families in the lower socio-economic structure, and its students come primarily from these families[5]. Consequently, during the first year the teachers of college credit classes found that in many of their classes over half of the students needed remedial help. This was quite a contrast to their previous classes on the other campuses, where a typical class would contain only three or four students of this caliber. The critical mass was reached and the problem was suddenly very real. No longer would a token effort be sufficient. Something had to be done and a realistic effort had to be made, for as Estes (1973) has said, "If we're gonna let 'em in, we'd better serve 'em."

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[5]Cosby (1973) reported that about 40% of the North Campus students come from families whose annual incomes are less than $9,000. He also estimated that 4 out of the 10 students enrolling in academic courses for the first time are black.

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Fortunately, there were enough concerned instructors and administrators on the campus who not only agreed with letting them in, but also were willing to devote their time, efforts, and talents to serve them. These dedicated professionals--most of whom were teaching regular college classes and all of whom, in the opinion of this writer, are excellent instructors--have spent the last three years towards this end. Additional staff members have been hired to assist in this difficult task as the program has grown.

Initially, this new core of remedial instructors was faced with many unanswered questions: What are the necessary ingredients of a viable remedial program? What learning strategies are most appropriate? Are there any proven models to copy? And although not many "do's" were known about remedial program, a great many "don'ts" were readily available as a result of the previous three years of floundering. Therefore, much of the early developments were primarily reactions to the "don'ts."

First and foremost among these was the realization that the connotation of remedial education on the North Campus had to be changed. The students had never been convinced that non-credit classes would do them any good, and the counselors compounded the problem as they had become reluctant to advise students to take these courses, which, at best, were of little proven value. It seemed unlikely that either group would accept any of the remedial classes unless they carried college credit; but could the objectives

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of credit classes be mastered by students in need of remediation? Time seemed to be the key factor, for from a practical point of view, remedial students could not be expected to achieve the course objectives in the normal three contact hours per week. Caroll (1963) emphasizes the significance of time by contending that the degree of learning, other things being equal, is a simple function of the amount of time during which the student engages actively in learning; and Bloom (1968) adds additional credence to the importance of time by avowing that given sufficient time, ninety-five percent of the students can achieve mastery. It was conjectured, therefore, by the remedial staff that by increasing the classes to five contact hours per week (a sixty-six percent increase) and embracing an open-ended semester, remedial students could reasonably be expected to master the objectives in credit courses. The staff further hypothesized that with this extra time teaching paradigms could be utilized to first remedy the students' deficiencies before attempting to master the course objectives. Such a premise would seem to be harmonious to the Herbartian's Theory of an apperceptive mass as it is related to teaching by Bigge (1971), when he says, "teachers must start with the experiences that students already have and enlarge and enrich them." Flyn (1973) likewise supports this by recommending that teachers should present new concepts only after the prerequisite concepts have been mastered. Parenthetically, there was some apprehension concerning the students' acceptance of the five

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contact hours in lieu of three contact hours, but fortunately, this has not proved to be a major problem.

Changing the non-credit classes to credit classes was necessary to change the image of the program; but as Roueche and Herscher (1970) have pointed out, the individual instructor remains the key to implementing any effective instructional program. Unfortunately, few of the instructors in the program were formally trained to work with remedial students, and most of their previous teaching experience had been in regular classes. None of the instructors, however, were drafted into the program; most importantly, they had come because they cared about human beings. These neo-remedial instructors were well aware of their deficiencies and they have spent much time during the last three years trying to ameliorate them by various means, such as visiting remedial programs at other institutions, attending relevant workshops and conferences, researching the literature, and experimenting within their own classes. As a result, their increased awareness has been accompanied by change and what has evolved is a remedial program, now called the Developmental Education Program, which is continually changing. There are, however, several principles which have become rather basic to the program and in essence form the foundation of the Developmental Education Program on the North Campus.

These major tenets are:

1. Instructional strategies must allow for the individual differences of students.

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2. As punishment is of little value in learning, instruction must be based primarily on positive reinforcement and student success.

3. The student's self-concept is an integral factor in learning.

4. Objective evaluations--summative and formative--are essential in decision making.

Most of the specifics of the current program are supportive of one or more of these principles. The instruction strategies, for example, are flexible to allow for student differences. Variable learning modes are employed, such as audio-tutorial, small group discussions, lecture, tutorial, video-tutorial, and other quasi forms of individualized instruction. Small classes[6] are complimented by student tutors and technologies to free the instructor to work with individuals. The courses are open-ended, and although students are encouraged to meet certain deadlines, they are allowed to work as long as necessary to master the course objectives[7]. Carroll's (1963) learning model with its five variables of learning, all a function of time, is congruous to this flexible learning paradigm; and so is Cohen's (1969) learning paradigm in his college of the future, as he allows for individual differences by having six different types of instructional means for each course. Monroe (1972) adds additional support to the grading scheme when, after reviewing

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[6]The maximum is 20 except in social studies where it is 40.

[7]Students who do not finish at the end of a term receive either an NP (non-punitive) or IF (incomplete), depending upon how much they have accomplished, and continue on in the subsequent term.

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several programs of the disadvantaged, he concludes that liberal grading practices coupled with increased time allowed to complete the course are promising innovations.

The second tenet of the program is compatible with the first, in that individualized instruction allows one to optimize positive reinforcement. Student success is guaranteed in the developmental classes by establishing obtainable objectives, which in turn minimize failure and/or punishment. A non-punitive grading system is also embraced[8] which removes the threat of failure and facilitates the concept of openendness. Much of this aspect of the program has foundations in the formal theories of learning. For example, none of the early disciples of behaviorism (Thorndike, Pavlov, Guthrie or Hullete) reviewed by Hilgard (1966) denied that the reinforcement of an act was beneficial to learning, although some did feel it was not necessary. The Skinnerian's or neo-behaviorists, as Bigge (1971) is prone to call them, agree that the reinforcement of an act increases its probable reoccurrence.

In general, reinforcement is essential to the neobehaviorist theories of learning; but according to Flyn (1973), there is some disagreement as to the applicability of negative reinforcement or punishment to teaching. Many feel that the emotional disturbances accompanying punishment negate its contributions, and therefore they advocate a

[8]Students make either A, B, C, IP, or NP (non-punitive).

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system based on positive reinforcement only. Concomitant with reinforcement is success; that is, a student should, upon experiencing academic success, be rewarded. Roueche and Herrscher (1970) have said, "Positive reinforcement and successful learning experiences are strong determinants of student learning." The importance of success is also implied by the cognitive-field psychologist (Bigge, 1971) since they feel that a student's goals must be obtainable and within his cognitive-field. Success is what it's all about, for as Pressey (1959) has said, "Learning feeds on success."

Most of the recognized viable remedial programs contain some vehicle which deals with the student's self-concept, the third tenet. The remedial programs at the South Campus of Miami-Dade Community College in Miami, Florida and El Centro Community College in Dallas, Texas are two such programs. This is not unique to two year colleges, for its importance is also recognized in four year colleges by William (1972), who reports, "...that the counseling component of the Thirteen College Curriculum Program is a significant part of the program and an important factor in student's ability to realize success." Finally, if student personnel services have risen to their present prominence in the community colleges because students in general need their services, then there can be little doubt as to the similar needs of remedial students.

Successful learning experiences are also important in developing the student's self-concept and each of the

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developmental classes aid in improving the student's self-concept by maximizing these experiences. One developmental course, however, has this as its primary function, and many of its class periods are devoted to group counseling sessions where negative concepts, such as failure, alienation, and inferiority are combated. Much of what must be negated in this phase of the remedial program has been identified in studies dealing with the culturally disadvantaged. For example, Deutsch (1963) found the school environment to be foreign to these students; Knoell (1968) says they have a tendency to invoke failure by procrastinating; Clarke and Ammons (1970) stress that the feelings of inferiority contribute greatly to their failure; Wepman and Klassen (1967) report many are passive and in need of directive compulsory counseling; and Reissman (1968) says they do not like schools. Special assignments, both group and individual, are made to enable the students to investigate many of these concepts and additional gains often occur through the group interaction accompanying these assignments. As an example, students explore their school and through this social microcosm, society in general. In short, this class aims to convince students that they are important, that they can learn, and that this is the place where it will happen.

Objective evaluations--the fourth tenet--could be called the doctrine of validity for the developmental program. The necessity of such a principle is reflected in the following

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statements by Roueche (1968):

> There is a paucity of research on the efficacy of remedial programs in the junior colleges. . . .Available research will not support the contention that junior colleges offer programs that, in fact, remedy student deficiencies.

Evaluations are certainly important to the North Campus program. Formative evaluations are constantly used to provide feedback on student performance, as well as the feasibility of the different instructional modes. As teaching and learning are interdependent, they must be evaluated simultaneously. This is possible since each developmental course has a specified set of student performance objectives, any of which can be related to different instructional means. A similar component is found in the following description of Cohen's (1969) instructional process in his college of the future:

> At the core of the college's processes will be the deliberate practice of instruction. It will be built on a definite teaching-learning paradigm and employ a built-in system of evaluation. Student's learning--predictable, measurable, definable--will be the college's raison d'etre.

Although these formative evaluations do much to affect learning, they are insufficient to establish the degree of validity necessary for a program which is highly suspect, such as the developmental program. Nothing short of a rigorous objective evaluation (summative) of academic achievement will convince the doubting Thomases. To this end, each developmental class has a minimum set of performance objectives, identical to or comparable with those in regular classes, which must be mastered before a student receives

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passing grade of C. For example, a student must read at the 10.5 grade level on the Nelson-Denny Reading Test before receiving a passing grade in Developmental Reading (ENG 161)[9].

The final phase, and the one to which this practicum is directed, is the periodic evaluation of the total developmental education program. This must be an objective analysis, the results of which are expressed with complete candor, for the validity of the current hypotheses must be determined before any new hypotheses can be assumed and subsequent actions taken[10]. This is to say that the developmental program must continuously engage in trial and error research if it ever hopes to solve the dilemmas of remedial education, for as Clark (1974) has pointed out, the people currently working in remedial programs in the community colleges know more about remedial education than anyone else.

PROCEDURE

In fulfilling the primary purpose of this practicum, the validity of the following hypotheses must be determined:

1. Remedial students entering the Developmental Education Program will pass more courses and make better grades than those in traditional

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[9]The students reading below the tenth grade level are advised to enroll in the developmental program, and though there are other variables to consider, the student's inability to read, as Kandell (1965) has pointed out, is thought to be the most significant.

[10]Blocker and Bacon (1973) have said that community colleges must not hesitate to critically evaluate and assess their own performance.

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classes not only for the term they are enrolled in the program, but for subsequent terms as well.

2. Remedial students enrolled in developmental classes are more inclined to complete the term and return the subsequent semester than are those enrolled in regular classes.

3. Remedial students entering the complete program (four courses) will pass more courses, make better grades and have a higher persistence rate than those who partially enroll in developmental classes.

4. Remedial students who are gradually phased out of the developmental program will pass more courses, make better grades and be more persistent than those who exit the program at the end of the first term.

To test the first hypothesis, the group parameters[11] of students enrolled in the developmental program (Group D) were compared to the parameters of a similar group of students enrolled in regular college classes (Group R). Each of the students selected in Group D was enrolled in all developmental education classes on the North Campus (12 hours), reading below the tenth grade level, and entering Florida Junior College for the first time. These were requisite characteristics for Group D as they identify the students for whom the developmental program is specifically designed, and although many other students not having all of these characteristics are enrolled in some of the developmental classes, they were not included in Group D. Some of these,

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[11]These include grade point averages, average number of hours completed with D or better grades, and average number of hours withdrawn.

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however, are considered later in this study. To insure that Group R and Group D were comparable, save for the one variable, only the students were chosen for Group R who also were enrolled in a minimum of 12 semester hours, all on the North Campus; reading below the tenth grade level; and entering Florida Junior College for the first time. It is also important to note that the groups contained approximately the same percentages of students at the various reading levels--below 7th grade, from 7th to 8th, from 8th to 9th, and from 9th to 10th. Members of both groups were selected from a list of over 350 students who had scored below the tenth grade level on the Nelson-Denny Reading Test, which had been given during orientation or during the first week of classes for the fall term of 1973. An alpha listing was then used to identify those from this list of 350 who had the other relevant requirements, and in essence, the groups were selected by the process of elimination. Since the randomness of this process is questionable (Hardyck, 1969), a t-test will not be used to determine if the grade point averages and the average number of credit hours completed by each of the groups differ significantly. Hopefully, the differences between the respective means will be of such magnitude as to leave little doubt of significance. These group parameters were obtained at the end of each semester from the student data bank via a computer program which was written for this practicum.

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The aforementioned groups (Groups D and R) were also used to test the second hypothesis and the average rate of retention was computed from two consecutive runs of the program which furnished the group parameters. Again, a t-test is not used because of the questionable randomness mentioned previously.

In the third hypothesis, the students in the complete program are defined as Group D and those who are partially enrolled (Group P) are defined as those enrolled in only two developmental classes, reading and English. The latter definition is chosen because it is believed that these are very necessary courses in the program and, in essence, may be sufficient. That is, the enrollment of a student in the two additional developmental courses may not greatly enhance his chances of success. Unfortunately, very few students could be identified in this category who also had all the requisite characteristics of the students in Group D. As a result, Group P is a small sample and it does contain some students who were not full-time (less than 12 hours); however, they all were first semester students who were reading below the tenth grade level. The same rationale and procedures that were described earlier were also used to determine the parameters of these groups.

For the fourth hypothesis, it was necessary to split Group D into two mutually exclusive groups, A and B, where A contains the students who enrolled in one or two additional

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developmental classes[12] during the winter term and B, those that did not enroll in these classes. Group A was so chosen because the developmental staff has conjectured that these students will maintain the much needed feeling of security in these classes, and they can also receive assistance in facing up to the many frustrations which they experience in adjusting to regular classes. Although A and B are samples from the same population (Group D), they were not chosen at random and hence, tests of significance are inappropriate. Therefore, the same relative procedures and evaluation employed previously was also used in handling the parameters relevant to these two groups.

RESULTS

An analysis of the data for the first two terms presented here generally implies that the developmental program on the North Campus is realistically opening the doors of the college to the remedial students. Admittedly, this is a precarious premise dependent upon the completion of this study[13]. Accordingly, the following results are supportive, although not conclusive.

Tables I and II reflect the fall term achievements of the remedial students enrolled in the developmental studies

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[12]Most of the students enrolled in a second course dealing with the self-concept aspect of the program (SSS 102) but a few also enrolled in another communications course (ENG 102).

[13]This study will be continued for at least two years.

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program (Group D) and regular classes (Group R). The data from these tables reveals that by comparison the developmental group has been far more successful during this term.

Nearly four times as many students in Group D passed[14] all of their courses as did Group R; and on the average, developmental students managed to complete 2.3 hours[15], (which is almost one course) more than the students in the other group. Not only did they complete more courses, but they also made better grades. In fact, the grade point average (GPA) of the typical developmental student was more than one letter grade[16] better than his counterpart enrolled in regular classes. He also passed two-thirds of his courses, while the regular student passed less than one-half. Concomitantly, the regular students averaged withdrawing from 25% of their classes during the term as compared to 4% for developmental students.

The discrepancies between the respective parameters of Groups D and R are large enough to leave little doubt of the validity of the first two hypotheses with respect to the fall term: Remedial students enrolled in the developmental studies program for the fall term did pass more courses, make better grades, and complete more courses than those enrolled in regular classes.

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[14]With D or better grades.
[15]Ibid.
[16]From 2.30 to 1.20.

TABLE 1

Group D - Fall Term, 1973/74

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Student	Hours Enrolled	Hours Withdrew	Hours Passed	Term GPA
1	12		12	2.75
2	12		3	2.00
3	12		6	2.00
4	12		3	1.00
5	12		12	3.00
6	12		3	2.00
* 7	15	3	12	3.50
8	12	3	3	2.00
9	12		3	2.00
10	12		9	3.00
11	12		3	2.00
12	12		12	3.00
13	12		12	2.50
14	12		9	3.00
15	12			.00
16	12		3	3.00
17	12		9	2.67
18	12		3	1.50
19	12		12	3.25
20	12	3	6	2.50
21	12		6	3.00
22	12		12	3.25
23	12		12	3.00
24	12		9	2.00
25	12		9	2.67
26	12		12	3.00
27	12		3	.67
28	12		6	3.00
29	12		9	1.75
30	12		6	1.33
31	12		9	3.33
32	12	12		.00
33	12		9	2.33
34	12	3	6	2.50
35	12		12	2.75
36	12		9	2.33
37	12		12	2.50
38	12	3	3	2.00
39	12		6	1.33
40	12		12	2.50
41	12		12	2.50
42	12		12	2.75
43	12		12	2.50
44	12		12	2.75
45	12		9	1.67
46	12		9	3.67
47	12		12	2.50
48	12		9	2.00
49	12		9	2.67
*50	14		11	2.71
51	12		6	2.50
52	12		6	1.33
53	12		3	.50
AVERAGES	12.0	.5	7.9	2.30

*These two students were taking an additional regular class.

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TABLE II

Group R - Fall Term, 1973/74

Student	Hours Enrolled	Hours Withdrew	Hours Passed	Term GPA
1	12	3		.00
2	13	3	10	2.50
3	12		9	1.25
4	16	16		.00
5	15		15	2.40
6	12		12	2.50
7	12	6	3	1.00
8	12	7		.00
9	12	3	3	.67
10	12	9	3	1.00
11	12	3		.00
12	12		9	1.33
13	12			.00
14	12			.00
15	12	3	6	2.50
16	15		15	2.80
17	13	10		.00
18	17			.00
19	12			.00
20	12	3	9	2.67
21	12		9	1.00
22	15		9	1.25
23	15	3	12	2.50
24	12	6	3	.50
25	12	3	9	1.67
26	12	3	6	2.00
27	12	6	6	1.00
28	15	9	6	3.00
29	16		10	1.40
AVERAGES	13.0	3.3	5.6	1.20

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The results of the winter term for Groups D and R appear in Tables III and IV; and although attrition has reduced the size of both groups, the data clearly implies that the remaining developmental students have also been more successful during this term.

Again, a greater portion of the students in Group D (39%) passed all of their courses than did those in Group R (27%); and on the average, each developmental student completed 2.1 hours more than the regular students. The students in Group D passed nearly three-fourths of their courses, while those in Group R passed slightly more than half; accordingly, the regular student's withdrawal rate was three times greater than that of the developmental students. Also, the developmental students made better grades than regular students, although the differences in the GPA's was not as great as in the fall term[17]. This is to be expected, however, since the attrition rate in Group R is nearly twice that of Group D[18]; consequently, a greater proportion of the less successful students[19] dropped out of Group R than Group D.

Based upon these results for the fall and winter terms, one would have to tentatively conclude that the first two hypotheses are valid, and therefore, remedial students do

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[17]The difference between the GPA's was 1.1 for the fall term and 0.66 for the winter term.

[18]Twenty four percent of the students in Group R did not return for the winter term compared to 13% in Group D.

[19]The average GPA of the students who did not return for the fall term was 0.9.

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have a much better chance of succeeding on the North Campus by enrolling in the developmental program.

TABLE III

Group D - Winter Term, 1973/74

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Student	Hours Enrolled	Hours Withdrew	Hours Passed	Term GPA
1	12		12	2.75
2	DID NOT ATTEND			
3	15		12	1.80
4	8		5	1.60
5	12		12	3.50
6	9		3	2.00
7	13		10	2.62
8	DID NOT ATTEND			
9	12	2	8	2.00
10	15		12	2.40
11	15	3		.00
12	11		5	2.00
13	12		12	3.00
14	12		9	2.00
15	DID NOT ATTEND			
16	12		12	2.50
17	12	3	9	2.33
18	12	3	3	1.80
19	13	3	7	3.29
20	DID NOT ATTEND			
21	12		12	2.00
22	11		11	3.00
23	16	3	3	1.50
24	14			.00
25	14		12	2.14
26	13		13	2.23
27	12		9	1.50
28	DID NOT ATTEND			
29	12		9	3.33
30	12		12	2.25
31	12		12	2.25
32	DID NOT ATTEND			
33	12		12	1.50
34	12		3	4.00
35	15		15	2.60
36	12		12	2.25
37	12		12	2.50
38	12	3	9	3.33
39	15		15	2.20
40	13		13	2.23
41	13		13	1.92
42	12		12	2.25
43	14		10	2.60
44	12		9	1.50
45	15	3	9	3.00
46	12		12	2.50
47	12	3	6	2.50
48	12	3	6	2.00
49	12		12	2.75
50	14	3	11	3.00
51	14			.00
52	14		3	1.20
53	DID NOT ATTEND			
AVERAGES	12.7	.6	9.0	2.20

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TABLE IV

Group B - Winter Term, 1973/74

Student	Hours Enrolled	Hours Withdrew	Hours Passed	Term GPA
1	DID NOT ATTEND			
2	15		11	2.00
3	12		12	2.50
4	12		12	1.50
5	12		12	3.00
6	12		6	1.33
7	DID NOT ATTEND			
8	12		12	1.75
9	12		9	1.67
10	12	6		.00
11	DID NOT ATTEND			
12	12	3	9	2.00
13	16	13		.00
14	DID NOT ATTEND			
15	13		13	3.08
16	15		15	3.20
17	12	3	6	2.50
18	DID NOT ATTEND			
19	DID NOT ATTEND			
20	12		9	2.67
21	12	3	6	2.00
22	13		3	.60
23	12	3	3	.33
24	9	3	6	2.50
25	14			.91
26	DID NOT ATTEND			
27	12		3	.50
28	12	12		.00
29	14			.00
AVERAGES	12.5	2.0	6.9	1.54

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Tables V and VI contain the data for the students in Group P for the fall and winter terms. Since there are few students in Group P and some are not full-time, no conjecture will be made on the third hypothesis, although some comparisons between Groups P and D will be noted.

The average remedial student who enrolled in the complete developmental program[20] did withdraw from fewer classes, have a higher GPA, and pass more courses than the remedial student who enrolled in only the two remedial courses[21], English and reading. The discrepancies between the groups, however, are not great and could easily be accounted for by variations within the groups. Likewise, the persistence rate for Group D is only slightly higher[22] than that of Group P. It is important to note that even though the students in Group P did not perform quite as well as Group D, they did do much better than the students in regular classes, Group R.

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[20]Group D - Tables I and II.
[21]Group P - Tables V and VI.
[22]The persistence rate was 85% for Group P and 87% for Group D.

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TABLE V

Group P - Fall Term, 1973/74

Student	Hours Enrolled	Hours Withdrew	Hours Passed	Term GPA
1	6		6	3.50
2	12			.00
3	15		15	3.00
4	6			.00
5	12		9	3.00
6	12		12	2.75
7	12		4	.83
8	9		9	3.00
9	13	3	10	2.80
10	9		9	2.67
11	12		12	3.50
12	12	3	3	3.00
13	12	3		.00
AVERAGES	10.9	.6	6.8	2.15

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TABLE VI

Group P - Winter Term, 1973/74

Student	Hours Enrolled	Hours Withdrew	Hours Passed	Term GPA
1	6		6	4.00
2	DID NOT ATTEND			
3	17		8	1.57
4	9		3	2.00
5	13		9	3.33
6	13		13	1.69
7	12	9		.00
8	9		6	2.00
9	13		13	2.46
10	DID NOT ATTEND			
11	13		10	1.60
12	12		3	2.00
13	13		9	1.67
AVERAGES	11.8	.8	7.2	2.02

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To test the fourth and final hypothesis, the winter term results for Groups A and B, displayed in Tables VII and VIII, must be analyzed. The initial results seemingly support the hypothesis, although there are some extenuating circumstances which must be considered.

Although the withdrawal rate for both groups was around 6% during the term, the students who are gradually being phased out of the program, Group A, did pass more courses[23] and make better grades in the winter term than did the students who exited the program at the end of the fall term (Group B). However, the students in Group A had also passed more courses and made better grades than those in Group B[24] during the fall term when both groups were enrolled in all developmental classes (Group D). It is possible, therefore, that the discrepancies between the groups could be inherent in the groups. The persistence rate for the groups is meaningless for the winter term since the students had to be enrolled to be a member of Group A; it will be a significant factor in the subsequent terms.

The data does support the validity of the fourth hypothesis, but unfortunately the results can also be accounted for by means other than those for which the hypothesis was formulated.

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[23]The students in Group A passed 3/4 of their courses while the students in Group B passed 2/3 of theirs.

[24]The following are the fall term means for Groups A and B: Group A - GPA, 2.42; hours passed, 9.4; hours withdrawn, 0.7. Group B - GPA, 2.26; hours passed, 8.8; hours withdrawn, 0.2. This information was computed from Table I.

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TABLE VII

Group A - Winter Term, 1973/74

Student	Hours Enrolled	Hours Withdrew	Hours Passed	Term GPA
1	15		12	1.80
2	9		3	2.00
3	13		10	2.62
4	15		12	2.40
5	11		5	2.00
6	12		12	3.00
7	12		9	2.00
8	12		12	2.50
9	12	3	9	2.33
10	12	3	3	1.80
11	13	3	7	3.29
12	12		12	2.00
13	11		11	3.00
14	16	3	3	1.50
15	12		9	1.50
16	12		9	3.33
17	12		3	4.00
18	15		15	2.60
19	12		12	2.25
20	12	3	9	3.33
21	13		13	2.23
22	12		12	2.25
23	14		10	2.60
24	12		9	1.50
25	12		12	2.50
26	12	3	6	2.00
27	12		12	2.75
28	14	3	11	3.00
29	12		12	2.25
AVERAGES	12.6	.7	9.4	2.42

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TABLE VIII

Group B - Winter Term, 1973/74

Student	Hours Enrolled	Hours Withdrew	Hours Passed	Term GPA
1	12		12	2.75
2	8		5	1.60
3	12		12	3.50
4	12	2	8	2.00
5	15	3		.00
6	14			.00
7	14		12	2.14
8	13		13	2.23
9	12		12	2.25
10	12		12	1.50
11	12		12	2.50
12	15		15	2.20
13	13		13	1.92
14	15	3	9	3.00
15	12	3	6	2.50
16	14			.00
17	14		3	1.20
AVERAGES	12.8	.6	8.4	1.84

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RECOMMENDATIONS

Although this study is incomplete, many insights have been gained and a number of areas in need of further investigation, identified. Accordingly, the following recommendations seem to be in order:

1. This study should be continued for at least two and possibly three more years.
2. The Developmental Education Program on the North Campus should continue to function at its present level until the second year of the study has been completed.
3. The significant results of this study should be shared with the North Campus teaching faculty and counseling staff. This, in turn, should enhance the image of developmental education on the campus and elicit their support.
4. The computer program providing the data for this study should be revised so that it will also give the number of quality points each student earns. It is the opinion of the writer that this statistic is the most significant single measure of student success since it reflects both the hours passed and the grades earned.

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5. A similar study should be formulated and instituted with the entering students for the fall term of the 1974/75 academic year.
6. The success of the students in Groups D and R should be compared with their reading levels at the beginning and ending of the fall term, 1973/74. Such an investigation may identify the optimum reading level to use in placing or recommending students into developmental classes. This could also reveal the minimum reading level which a student would have to obtain before passing developmental reading.
7. The findings of this study should be used as rationale to support future budget requests for the high cost developmental education program.
8. Case studies should be done on both the most and least successful students in Groups D and R. In so doing, student characteristics may be identified which attributed to their respective accomplishments.
9. The reading levels of the students in Groups R and D should be reassessed at the end of the second year of this study. This information might prove that the gains made in reading in the developmental reading classes

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during the first year are not retained over a period of time. Likewise, it could prove that the reading levels have been retained or even increased for those students who have remained in school.

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